

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of: ) **Mail Stop Appeal Brief - Patents**  
Nurettin Burcak BESER )  
Application No.: 10/667,978 ) Group Art Unit: 2153  
Filed: September 23, 2003 ) Examiner: P. Chea  
For: SYSTEMS AND METHODS FOR )  
ORDERED INITIALIZATION OF )  
CABLE MODEMS )

**APPEAL BRIEF**

U.S. Patent and Trademark Office  
Customer Window, Mail Stop Appeal Brief - Patents  
Randolph Building  
401 Dulany Street  
Alexandria, Virginia 22314

Sir:

This Appeal Brief is submitted in response to the Final Office Action mailed March 13, 2008 and in support of the Notice of Appeal filed June 13, 2008.

I. **REAL PARTY IN INTEREST**

The real party in interest in this appeal is Juniper Networks, Inc.

II. **RELATED APPEALS AND INTERFERENCES**

Appellant is unaware of any related appeals, interferences or judicial proceedings.

**III. STATUS OF CLAIMS**

Claims 1, 3-8, 10-31 and 34 are pending in this application. Claims 2, 9, 32, and 33 were previously canceled without prejudice or disclaimer. Claims 1, 3-8, 10-31 and 34 are rejected and are the subject of the present appeal. Claims 1, 3-8, 10-31 and 34 are reproduced in the Claim Appendix of this Appeal Brief.

**IV. STATUS OF AMENDMENTS**

No Amendment has been filed subsequent to the Final Office Action mailed March 13, 2008. A Request for Reconsideration, however, was filed on May 13, 2008. A subsequent Advisory Action, mailed May 22, 2008, indicated that the Amendment will be entered for purposes of Appeal.

**V. SUMMARY OF THE CLAIMED SUBJECT MATTER**

Each of the independent claims involved in this appeal is recited below, followed in parenthesis by examples of where support can be found in the specification and drawings for the claimed subject matter. In addition, each dependent claim argued separately below is also summarized in a similar manner.

Claim 1 recites: A method of allocating upstream resources to a plurality of cable modems, comprising: grouping the plurality of cable modems into a plurality of groups based on quality of service requirements of each of the cable modems (e.g., 815, Fig. 8; page 13, line 16 – page 14, line 2); ordering allocation of said upstream resources to each of the plurality of cable modems based on the group to which each of the cable modems belongs (e.g., 815, Fig. 8; page 13, line 16 – page 14, line 2); and allocating said

upstream resources to each of the cable modems based on the ordering (e.g., 815, Fig. 8; page 13, line 16 – page 14, line 2).

Claim 3 recites: The method of claim 1, wherein allocating said upstream resources comprises: assigning initialization channels of the upstream resources to each of the plurality of cable modems based on the grouping of the plurality of cable modems (e.g., page 11, lines 2-9).

Claim 4 recites: The method of claim 1, wherein allocating said upstream resources comprises: assigning registration channels of the upstream resources to each of the plurality of cable modems based on the grouping of the cable modems (e.g., page 11, lines 2-9).

Claim 5 recites: The method of claim 1, wherein a first group of the plurality of groups comprises message transferring agents (e.g., page 13, lines 7-15).

Claim 8 recites: A cable modem termination system (CMTS), comprising: a memory configured to store instructions (e.g., 210, Fig. 2; page 7, lines 1-9); and a processing unit (e.g., 205, Fig. 2; page 7, lines 1-9) configured to execute the instructions in the memory to: group a plurality of cable modems (CMs) into a plurality of groups based on quality of service requirements of each of the cable modems (e.g., 815, Fig. 8; page 13, line 16 – page 14, line 2), re-boot the CMTS (e.g., page 11, lines 18-23), and determine an order for allocating upstream resources to each of the plurality of CMs based on the group to which each of the CMs belongs (e.g., 815, Fig. 8; page 13, line 16 – page 14, line 2).

Claim 10 recites: The system of claim 8, wherein the processing unit is further configured to execute the instructions in the memory to: allocate initialization channels of

the upstream resources to each of the plurality of CMs based on the grouping of the plurality of CMs (e.g., page 11, lines 2-9).

Claim 11 recites: The system of claim 8, wherein the processing unit is further configured to execute the instructions in the memory to: allocate registration channels of the upstream resources to each of the plurality of CMs based on the grouping of the CMs (e.g., page 11, lines 2-9).

Claim 12 recites: The system of claim 8, wherein a first group of the plurality of groups comprises message transferring agents (e.g., page 13, lines 7-15).

Claim 15 recites: A method of allocating upstream resources in a cable modem system, comprising: receiving upstream resource requests from a plurality of cable modems, each of the resource requests comprising an address associated with a cable modem of the plurality of cable modems (e.g., 715, Fig. 7; page 12, lines 9-19); determining an order that the upstream resources are to be assigned to each of the plurality of cable modems based on the address of each of the resource requests (e.g., 815, Fig. 8; page 13, line 16 – page 14, line 2); and allocating the upstream resources based on the determined order (e.g., 815, Fig. 8; page 13, line 16 – page 14, line 2).

Claim 20 recites: A cable modem termination system, comprising: a memory configured to store instructions (e.g., 210, Fig. 2; page 7, lines 1-9); a communication interface (e.g., 215, Fig. 2; page 7, lines 10-18) configured to receive upstream resource requests from a plurality of cable modems, each of the resource requests comprising an address associated with a cable modem of the plurality of cable modems (e.g., page 12, lines 9-19); and a processing unit (e.g., 205, Fig. 2; page 7, lines 1-9) configured to execute the instructions in the memory to: determine an order for allocating upstream

resources to each of the plurality of cable modems based on the address of each of the resource requests (e.g., 815, Fig. 8; page 13, line 16 – page 14, line 2).

Claim 23 recites: The system of claim 20, wherein the processing unit is further configured to execute the instructions in the memory to: allocate the upstream resources to each of the plurality of cable modems based on a group of the plurality of groups to which each cable modem belongs (e.g., 815, Fig. 8; page 13, line 16 – page 14, line 2).

Claim 25 recites: A method of initializing cable modems subsequent to a cable modem termination system re-boot, comprising: receiving initial upstream channel requests from a plurality of said modems (e.g., 715, Fig. 7; page 12, lines 9-19); retrieving first data from each of the requests (e.g., 715, Fig. 7; page 12, lines 9-19); and determining an order in which to assign upstream channels to each of the plurality of modems based on the retrieved first data (e.g., 815, Fig. 8; page 13, line 16 – page 14, line 2).

Claim 29 recites: The method of claim 27, wherein a first group of the plurality of groups comprise message transferring agents (e.g., page 13, lines 7-15).

Claim 34 recites: A system for allocating upstream resources to a plurality of cable modems subsequent to a cable modem termination system (CMTS) re-boot, comprising: means for grouping the plurality of cable modems into a plurality of groups (115, Fig. 1; page 13, line 16 – page 14, line 2); and means of identifying an order, subsequent to the CMTS re-boot, that said upstream resources are to be allocated to each of the plurality of cable modems based on the group to which each of the cable modems belongs (115, Fig. 1; page 13, line 16 – page 14, line 2).

**VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

A. Claims 1 and 3-5 are rejected under 35 U.S.C. § 102(e) as anticipated by FIJOLEK et al. (U.S. Patent No. 6,553,568).

B. Claims 6-8, 10-31, and 34 are rejected under 35 U.S.C. § 103(a) as being unpatentable over FIJOLEK et al. in view of ZADIKIAN et al. (U.S. Patent No. 6,912,221).

**VII. ARGUMENTS**

**A. The rejection under 35 U.S.C. § 102 based on FIJOLEK et al. should be reversed.**

The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention always rests upon the Examiner. In re Oetiker, 977 F.2d 1443, 24 U.S.P.Q.2d 1443 (Fed. Cir. 1992). A proper rejection under 35 U.S.C. § 102 requires that a single reference teach every aspect of the claimed invention. Any feature not directly taught must be inherently present. Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 2 U.S.P.Q.2d 1051 (Fed. Cir. 1987).

**1. Claim 1**

Independent claim 1 recites a method of allocating upstream resources to a plurality of cable modems. The method includes grouping the plurality of cable modems into a plurality of groups based on quality of service requirements of each of the cable modems; ordering allocation of upstream resources to each of the plurality of cable modems based on the group to which each of the cable modems belongs; and allocating upstream resources to each of the cable modems based on the ordering. FIJOLEK et al.

does not disclose or suggest this combination of features.

For example, FIJOLEK et al. does not disclose or suggest ordering allocation of upstream resources to each of a plurality of cable modems based on a group to which each of the cable modems belongs, and allocating upstream resources to each of the cable modems based on the ordering, as recited in claim 1. The Examiner relies on column 23, line 64 – column 24, line 28 of FIJOLEK et al. as allegedly disclosing these features (final Office Action, pg. 2). Appellant respectfully disagrees with the Examiner's interpretation of FIJOLEK et al.

At column 23, line 64 – column 24, line 28, FIJOLEK et al. discloses:

In one exemplary preferred embodiment of the present invention, the configuration files specify at least a Maximum Rate Limit ("MRL") for both a downstream and an upstream connection based on a respective CoS policy for a service level agreement. In one preferred embodiment of the present invention, the CMTS 12 to CM 16 or CPE 18, CoS capability is limited to enforcement of maximum bit rates. Since upstream CoS policy enforcement also depends on this downstream rate limitation interaction, the same bandwidth rate is used for upstream CIR and MBR. However, in another preferred embodiment of the present invention, the CoS policy enforcement is not limited only to enforcement of MBR and a separate list of upstream and downstream limits can also be enforced. Table 20 illustrates a list of exemplary configuration files created at Step 160.

TABLE 20

Plan	Config. File Name	MRL Down	MRL Up
Biz Gold	BizGold.conf	1544K	512K
Biz Silver	BizSilver.conf	800K	256K
Gold	Gold.conf	812K	128K
Silver	Silver.conf	256K	64K
Premium	Premium.conf	128K	40K

At Step 164, the MRL and other CoS or QoS bandwidth information from the configuration files is loaded in the cable access router 144. The cable access router 144 uses the CoS or QoS information to enforce the MRLs for a desired service level agreement between the CMTS 12 and CMs 16 or CPEs 18. includes setting one or more parameters for class-of-service or quality-of-service for the desired service level agreement.

This section of FIJOLEK et al. discloses specifying a Maximum Rate Limit (MRL) for a downstream and an upstream connection based on a policy for a service level agreement. This section of FIJOLEK et al. further discloses that a cable access router enforces the MRLs for a desired service level agreement between the cable modem termination system and the cable modems. This section of FIJOLEK et al. does not disclose ordering an allocation of resources. Instead, this section of FIJOLEK et al. merely discloses specifying a maximum rate limit for a connection. Therefore, this section of FIJOLEK does not disclose or suggest ordering allocation of upstream resources to each of a plurality of cable modems based on a group to which each of the cable modems belongs, and allocating upstream resources to each of the cable modems based on the ordering, as recited in claim 1.

In response to similar arguments made in a previous response, at page 6 of the final Office Action, the Examiner alleges that “[i]t is clear that the Biz Gold has a higher order for allocated upstream resources because it is allocated a higher upstream speed.” The Examiner further alleges, on page 6, that “the quality of service is allocated to the modem based on group it is in. For example, the Biz Gold group will be allocated the higher order of quality of service than the Premium.” Appellant respectfully disagrees with the Examiner’s allegations.

As noted above, FIJOLEK et al. discloses specifying a Maximum Rate Limit (MRL) for a downstream and an upstream connection based on a policy for a service level agreement. FIJOLEK et al. does not disclose that the Biz Gold has a higher upstream speed, as alleged by the Examiner. Rather, Table 20 of FIJOLEK et al. discloses that Biz Gold has the highest Maximum Rate Limit and is therefore capable of

transmitting at a higher speed. Furthermore, FIJOLEK et al. does not disclose or suggest ordering allocation of upstream resources or allocating upstream resources based on the order. Specifying different MRLs based on service level agreements is not equivalent to ordering allocation of upstream resources. Therefore, FIJOLEK et al. does not disclose or suggest ordering allocation of upstream resources to each of a plurality of cable modems based on a group to which each of the cable modems belongs, and allocating upstream resources to each of the cable modems based on the ordering, as recited in claim 1.

For at least the foregoing reasons, Appellant submits that the rejection of claim 1 under 35 U.S.C. § 102(e) based on FIJOLEK et al. is improper. Accordingly, Appellant request that the rejection of claim 1 be reversed.

## 2. Claim 3

Claim 3 depends from claim 1. Therefore, Appellant requests that the rejection of claim 3 be reversed for at least the reasons given above with respect to claim 1. Moreover, claim 3 recites additional features not disclosed or suggested by FIJOLEK et al.

Claim 3 recites assigning initialization channels of the upstream resources to each of the plurality of cable modems based on the groupings of the plurality of cable modems. The Examiner relies on column 23, lines 44-56 of FIJOLEK et al. as allegedly disclosing this feature (final Office Action, pg. 3). Appellant respectfully disagrees with the Examiner's interpretation of FIJOLEK et al.

At column 23, lines 44-56, FIJOLEK et al. discloses:

A network address server associated with the cable modem termination system

allocates the reserved network address to the network device from the pool of network addresses associated with the requested service level agreement. At Step 176, the statically reserved network address is received on the network device in response to the dynamic request for a network address. At Step 178, a configuration file is received on the network device in response to the boot sequence. The configuration file is used to initialize a network device with configuration parameters and a desired service level agreement on the data-over-cable system. The configuration file includes default initialization parameters as well as service level agreement parameters.

This section of FIJOLEK et al. discloses receiving, at a network device, a configuration file that includes default initialization parameters and service level agreement parameters. While this section of FIJOLEK et al. discloses allocating a network address that corresponds to a requested service level agreement to a network device, this section of FIJOLEK et al. does not disclose or suggest assigning initialization channels of the upstream resources to each of the plurality of cable modems based on the groupings of the plurality of cable modems, as recited in claim 3. In fact, this section of FIJOLEK et al. does not disclose assigning initialization channels at all.

For at least this additional reason, Appellant submits that the rejection of claim 3 under 35 U.S.C. § 102 based on FIJOLEK et al. is improper. Accordingly, Appellant requests that the rejection of claim 3 be reversed.

### 3. Claim 4

Claim 4 depends from claim 1. Therefore, Appellant requests that the rejection of claim 4 be reversed for at least the reasons given above with respect to claim 1. Moreover, claim 4 recites an additional feature not disclosed or suggested by FIJOLEK et al.

For example, claim 4 recites assigning registration channels of the upstream resources to each of the plurality of cable modems based on the groupings of the cable modems. The Examiner relies on column 24, line 59 – column 25, line 3 of FIJOLEK et

al. as allegedly disclosing this feature of claim 4 (final Office Action, pg. 3). Appellant respectfully disagrees with the Examiner's interpretation of FIJOLEK et al.

At column 24, line 59 – column 25, line 3, FIJOLEK et al. discloses:

In one preferred embodiment of the present invention a "Request IP Address" option 50 in the DHCP 66 message options-field 138 (FIG. 5) is set to include the statically reserved IP 54 address. This DHCP option 50 allows a request for a specific IP 54 address (i.e., a statically reserved IP 54 address). Thus, CM 16 and/or CPE 18 will send a DCHPDISCOVER message as described above in Table 4b with the DHCP 66 options-field 138 including DHCP option 50. This option field includes the statically reserved IP 54 address from the pool of network addresses associated with the requested service level agreement.

This section of FIJOLEK et al. discloses requesting a specific IP address from a pool of network addresses associated with a requested service level agreement. Requesting a specific IP address is not equivalent to assigning registration channels of upstream resources. Moreover, the Examiner provides no explanation as to why one skilled in the art would reasonably construe the act of requesting a specific IP address as equivalent to assigning registration channels of upstream resources. Therefore, this section of FIJOLEK et al. does not disclose or suggest assigning registration channels of the upstream resources to each of the plurality of cable modems based on the groupings of the cable modems, as recited in claim 4.

For at least this additional reason, Appellant submits that the rejection of claim 4 under 35 U.S.C. § 102 based on FIJOLEK et al. is improper. Accordingly, Appellant requests that the rejection of claim 4 be reversed.

#### 4. Claim 5

Claim 5 depends from claim 1. Therefore, Appellant requests that the rejection of claim 5 be reversed for at least the reasons given above with respect to claim 1. Moreover, claim 5 recites additional features not disclosed or suggested by FIJOLEK et

al.

For example, claim 5 recites that a first group of the plurality of groups comprises message transferring agents. The Examiner relies on column 24, lines 39-41 of FIJOLEK et al. as allegedly disclosing this feature of claim 5 (final Office Action, pg. 3). Appellant respectfully disagrees with the Examiner's interpretation of FIJOLEK et al.

At column 24, lines 39-41, FIJOLEK et al. discloses that the Medium Access Control (MAC) address is sent to a cable modem or to customer premise equipment in a Termination System Information (TSI) message. This section of FIJOLEK et al. does not disclose a group, let alone a group that comprises message transferring agents. Therefore, this section of FIJOLEK et al. does not disclose or suggest that a first group of the plurality of groups comprises message transferring agents.

For at least this additional reason, Appellant submits that the rejection of claim 5 under 35 U.S.C. § 102 based on FIJOLEK et al. is improper. Accordingly, Appellant requests that the rejection of claim 5 be reversed.

**B. The rejection under 35 U.S.C. § 103 based on FIJOLEK et al. and ZADIKIAN et al. should be reversed.**

The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention always rests upon the Examiner. In re Oetiker, 977 F.2d 1443, 24 U.S.P.Q.2d 1443 (Fed. Cir. 1992). In rejecting a claim under 35 U.S.C. § 103, the Examiner must provide a factual basis to support the conclusion of obviousness. In re Warner, 379 F.2d 1011, 154 U.S.P.Q. 173 (C.C.P.A. 1967). Based upon the objective evidence of record, the Examiner is required to make the factual inquiries mandated by

Graham v. John Deere Co., 86 S. Ct. 684, 383 U.S. 1, 148 U.S.P.Q. 459 (1966). KSR International Co. v. Teleflex Inc., 550 U.S. \_\_\_, 127 S. Ct. 1727 (2007). The Examiner is also required to explain how and why one having ordinary skill in the art would have been realistically motivated to modify an applied reference and/or combine applied references to arrive at the claimed invention. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 5 U.S.P.Q.2d 1434 (Fed. Cir. 1988).

1. Claims 6 and 7

Claims 6 and 7 depend from claim 1. Without acquiescing in the Examiner's rejection of claims 6 and 7, Appellants submit that the disclosure of ZADIKIAN et al. does not remedy the deficiencies in the disclosure of FIJOLEK et al. set forth above with respect to claim 1. Therefore, Appellants request that the rejection of claims 6 and 7 be reversed for at least the reasons given above with respect to claim 1.

2. Claims 8, 13, and 14

Independent claim 8 recites a cable modem termination system (CMTS). The CMTS includes a memory configured to store instructions; and a processing unit configured to execute the instructions in the memory to: group a plurality of cable modems (CMs) into a plurality of groups based on quality of service requirements of each of the cable modems, re-boot the CMTS, and determine an order for allocating upstream resources to each of the plurality of CMs based on the group to which each of the CMs belongs. FIJOLEK et al. and ZADIKIAN et al., whether taken alone or in reasonable combination, do not disclose or suggest this combination of features.

For example, FIJOLEK et al. and ZADIKIAN et al. do not disclose or suggest a processing unit configured to execute instructions in the memory to determine an order

for allocating upstream resources to each of a plurality of CMs based on a group to which each of the CMs belongs. The Examiner appears to admit that FIJOLEK et al. does not disclose this feature and relies on column 6, lines 15-22 of ZADIKIAN et al. as allegedly disclosing this feature (final Office Action, pg. 4). Appellant respectfully disagrees with the Examiner's interpretation of ZADIKIAN et al.

At column 6, lines 15-22, ZADIKIAN et al. discloses:

In cases where there is insufficient bandwidth to satisfy all failed connections, the protocol, in one embodiment, uses a quality of service (QoS) metric to prioritize the restoration sequence. In such embodiment, connections with the highest QoS are restored first, followed, in a descending order, by those with a lower QoS, until either all connections have been restored or all available bandwidth has been used.

This section of ZADIKIAN et al. discloses restoring connections with a highest quality of service first, followed, in descending order, by those with a lower quality of service, until either all connections have been restored or all available bandwidth has been used. This section of ZADIKIAN et al. discloses restoring failed connections based on quality of service, not a processing unit configured to execute instructions in the memory to determine an order for allocating upstream resources to each of a plurality of CMs based on a group to which each of the CMs belongs, as recited in claim 8.

In response to the above arguments, at page 7 of the final Office Action, the Examiner alleges that “[s]ince the connections are being restored, it is inherent that the connections are being allocated. And since they are being allocated in order of highest priority to lowest priority, it reads on the claimed limitation of determining an order for allocating resources.” Appellant respectfully disagrees with the Examiner's allegation.

Claim 8 recites allocating upstream resources. A connection is not an upstream resource. Therefore, restoring failed connections is not the same as allocating upstream resources. Therefore, ZADIKIAN et al. does not disclose or suggest a processing unit

configured to execute instructions in the memory to determine an order for allocating upstream resources to each of a plurality of CMs based on a group to which each of the CMs belongs, as recited in claim 8.

For at least the foregoing reasons, Appellant submits that the rejection of claim 8 under 35 U.S.C. § 103 based on FIJOLEK et al. and ZADIKIAN et al. is improper. Accordingly, Appellant requests that the rejection of claim 8 be reversed.

Claims 13 and 14 depend from claim 8. Therefore, Appellant requests that the rejection of claims 13 and 14 be reversed for at least the reasons given above with respect to claim 8.

## 2. Claim 10

Claim 10 depends from claim 8. Therefore, Appellant requests that the rejection of claim 10 be reversed for at least the reasons given above with respect to claim 8. Moreover, claim 10 recites an additional feature not disclosed or suggested by FIJOLEK et al. and ZADIKIAN et al.

For example, claim 10 recites that the processing unit is further configured to execute the instructions in the memory to allocate initialization channels of the upstream resource to each of the plurality of CMs based on the groupings of the plurality of CMs. The Examiner relies on column 23, lines 44-56 of FIJOLEK et al. as allegedly disclosing this feature of claim 10 (final Office Action, pg. 5). Appellant respectfully disagrees with the Examiner's interpretation of FIJOLEK et al.

As noted above, at column 23, lines 44-56, FIJOLEK et al. discloses receiving, at a network device, a configuration file that includes default initialization parameters and service level agreement parameters. While this section of FIJOLEK et al. discloses

allocating a network address that corresponds to a requested service level agreement to a network device, this section of FIJOLEK et al. does not disclose or suggest that the processing unit is further configured to execute the instructions in the memory to allocate initialization channels of the upstream resource to each of the plurality of CMs based on the groupings of the plurality of CMs, as recited in claim 10. In fact, this section of FIJOLEK et al. does not disclose allocating initialization channels at all.

The disclosure of ZADIKIAN et al. does not remedy the deficiencies in the disclosure of FIJOLEK et al. set forth above.

For at least this additional reason, Appellant submits that the rejection of claim 3 under 35 U.S.C. § 102 based on FIJOLEK et al. and is improper. Accordingly, Appellant requests that the rejection of claim 3 be reversed.

### 3. Claim 11

Claim 11 depends from claim 8. Therefore, Appellant requests that the rejection of claim 11 be reversed for at least the reasons given above with respect to claim 8. Moreover, claim 11 recites an additional feature not disclosed or suggested by FIJOLEK et al. and ZADIKIAN et al.

For example, claim 11 recites that the processing unit is further configured to execute the instructions in the memory to allocate registration channels of the upstream resources to each of the plurality of CMs based on the grouping of the CMs. The Examiner relies on column 24, line 59 – column 25, line 3 of FIJOLEK et al. as allegedly disclosing this feature of claim 11 (final Office Action, pg. 5). Appellant respectfully disagrees with the Examiner's interpretation of FIJOLEK et al.

As noted above, at column 24, line 59 – column 25, line 3, FIJOLEK et al.

discloses requesting a specific IP address from a pool of network addresses associated with a requested service level agreement. Requesting a specific IP address is not equivalent to allocating registration channels of upstream resources. Therefore, this section of FIJOLEK et al. does not disclose or suggest that the processing unit is further configured to execute the instructions in the memory to allocate registration channels of the upstream resources to each of the plurality of CMs based on the grouping of the CMs, as recited in claim 11.

The disclosure of ZADIKIAN et al. does not remedy the deficiencies in the disclosure of FIJOLEK et al. set forth above.

For at least this additional reason, Appellant submits that the rejection of claim 11 under 35 U.S.C. § 102 based on FIJOLEK et al. and ZADIKIAN et al. is improper. Accordingly, Appellant requests that the rejection of claim 11 be reversed.

#### 4. Claim 12

Claim 12 depends from claim 8. Therefore, Appellant requests that the rejection of claim 12 be reversed for at least the reasons given above with respect to claim 8. Moreover, claim 12 recites an additional feature not disclosed or suggested by FIJOLEK et al. and ZADIKIAN et al.

For example, claim 12 recites that a first group of the plurality of groups comprises message transferring agents. The Examiner relies on column 24, lines 39-41 of FIJOLEK et al. as allegedly disclosing this feature of claim 12 (final Office Action, pg. 5). Appellant respectfully disagrees with the Examiner's interpretation of FIJOLEK et al.

As noted above, at column 24, lines 39-41, FIJOLEK et al. discloses that the Medium Access Control (MAC) address is sent to a cable modem or to customer premise

equipment in a Termination System Information (TSI) message. This section of FIJOLEK et al. does not disclose a group, let alone a group that comprises message transferring agents. Therefore, this section of FIJOLEK et al. does not disclose or suggest that a first group of the plurality of groups comprises message transferring agents, as recited in claim 12.

For at least this additional reason, Appellant submits that the rejection of claim 12 under 35 U.S.C. § 103 based on FIJOLEK et al. and ZADIKIAN et al. is improper. Accordingly, Appellant requests that the rejection of claim 12 be reversed.

##### 5. Claims 15-19

Independent claim 15 recites a method of allocating upstream resources in a cable modem system. The method includes receiving upstream resource requests from a plurality of cable modems, each of the resource requests comprising an address associated with a cable modem of the plurality of cable modems; determining an order that the upstream resources are to be assigned to each of the plurality of cable modems based on the address of each of the resource requests; and allocating the upstream resources based on the determined order. FIJOLEK et al. and ZADIKIAN et al., whether taken alone or in any reasonable combination, do not disclose or suggest this combination of features.

For example, FIJOLEK et al. and ZADIKIAN et al. do not disclose or suggest determining an order that the upstream resources are to be assigned to each of a plurality of cable modems based on an address of each of the resource requests. The Examiner appears to admit that FIJOLEK et al. does not disclose this feature and relies on column 6, lines 15-22 of ZADIKIAN et al. as allegedly disclosing this feature (final Office

Action, pg. 5). Appellant respectfully disagrees with the Examiner's interpretation of ZADIKIAN et al.

Column 6, lines 15-22 of ZADIKIAN et al. has been reproduced above. This section of ZADIKIAN et al. discloses restoring connections with a highest quality of service first, followed, in descending order, by those with a lower quality of service, until either all connections have been restored or all available bandwidth has been used. This section of ZADIKIAN et al. discloses restoring failed connections based on quality of service, not determining an order that the upstream resources are to be assigned to each of a plurality of cable modems based on an address of each of the resource requests, as recited in claim 15. In fact, this section of ZADIKIAN et al. does not even mention a resource request.

The Examiner provides no explanation as to how one skilled in the art at the time of Appellant's invention could reasonably construe the above section of ZADAKIAN et al. as disclosing determining an order that the upstream resources are to be assigned to each of a plurality of cable modems based on an address of each of the resource requests. Accordingly, a prima facie case of obviousness has not been established with regard to claim 15.

For at least the foregoing reasons, Appellant submits that the rejection of claim 15 under 35 U.S.C. § 103 based on FIJOLEK et al. and ZADIKIAN et al. is improper. Accordingly, Appellant requests that the rejection of claim 15 be reversed.

Claims 16-19 depend from claim 15. Therefore, Appellant requests that the rejection of claims 16-19 be reversed for at least the reasons given above with respect to claim 15.

6. Claims 20-22 and 24

Independent claim 20 recites a cable modem termination system that comprises a memory configured to store instructions; a communication interface configured to receive upstream resource requests from a plurality of cable modems, each of the resource requests comprising an address associated with a cable modem of the plurality of cable modems; and a processing unit configured to execute the instructions in the memory to: determine an order for allocating upstream resources to each of the plurality of cable modems based on the address of each of the resource requests. FIJOLEK et al. and ZADIKIAN et al., whether taken alone or in any reasonable combination, do not disclose or suggest this combination of features.

For example, FIJOLEK et al. and ZADIKIAN et al. do not disclose or suggest a processing unit configured to execute the instructions in the memory to determine an order for allocating upstream resources to each of a plurality of cable modems based on an address of each of the resource requests. The Examiner appears to admit that FIJOLEK et al. does not disclosing this feature and relies on column 6, lines 15-22 of ZADIKIAN et al. as allegedly disclosing this feature of claim 20 (final Office Action, pg. 5). Appellant respectfully disagrees with the Examiner's interpretation of ZADIKIAN et al.

Column 6, lines 15-22 of ZADIKIAN et al. has been reproduced above. This section of ZADIKIAN et al. discloses restoring connections with a highest quality of service first, followed, in descending order, by those with a lower quality of service, until either all connections have been restored or all available bandwidth has been used. This section of ZADIKIAN et al. discloses restoring failed connections based on quality of

service, not determining an order for allocating upstream resources to each of a plurality of cable modems based on an address of each of the resource requests. In fact, this section of ZADIKIAN et al. does not even mention a resource request. Therefore, this section of ZADIKIAN et al. does not disclose or suggest a processing unit configured to execute the instructions in the memory to determine an order for allocating upstream resources to each of a plurality of cable modems based on an address of each of the resource requests, as recited in claim 20.

The Examiner provides no explanation as to how one skilled in the art at the time of Appellant's invention could reasonably construe the above section of ZADAKIAN et al. as disclosing a processing unit configured to execute the instructions in the memory to determine an order for allocating upstream resources to each of a plurality of cable modems based on an address of each of the resource requests. Accordingly, a prima facie case of obviousness has not been established with regard to claim 20.

For at least the foregoing reasons, Appellant submits that the rejection of claim 20 under 35 U.S.C. § 103 based on FIJOLEK et al. and ZADIKIAN et al. is improper. Accordingly, Appellant requests that the rejection of claim 20 be reversed.

Claims 21, 22, and 24 depend from claim 20. Therefore, Appellant requests that the rejection of claims 21, 22, and 24 be reversed for at least the reasons given above with respect to claim 20.

#### 7. Claim 23

Claim 23 depends from claim 20. Therefore, Appellant requests that the rejection of claim 23 be reversed for at least the reasons given above with respect to claim 20. Moreover, claim 23 recites an additional feature not disclosed or suggested by FIJOLEK

et al. and ZADIKIAN et al.

For example, claim 23 recites that the processing unit is further configured to execute the instructions in the memory to allocate the upstream resources to each of the plurality of cable modems based on a group of the plurality of groups to which each cable modem belongs. The Examiner appears to admit that FIJOLEK et al. does not disclose this feature and appears to rely on column 6, lines 15-22 of ZADIKIAN et al. as allegedly disclosing this feature of claim 23 (final Office Action, pp. 3 and 6). Appellant respectfully disagrees with the Examiner's interpretation of ZADIKIAN et al.

Column 6, lines 15-22 of ZADIKIAN et al. has been reproduced above. This section of ZADIKIAN et al. discloses restoring connections with a highest quality of service first, followed, in descending order, by those with a lower quality of service, until either all connections have been restored or all available bandwidth has been used. This section of ZADIKIAN et al. discloses restoring failed connections based on quality of service, not allocating upstream resources to each of the plurality of cable modems based on a group of the plurality of groups to which each cable modem belongs. In fact, this section of ZADIKIAN et al. does not disclose allocating upstream resources at all.

For at least the foregoing reasons, Appellant submits that the rejection of claim 23 under 35 U.S.C. § 103 based on FIJOLEK et al. and ZADIKIAN et al. is improper. Accordingly, Appellant requests that the rejection of claim 23 be reversed.

8. Claims 25-28, 30, and 31

Claim 25 recites a method of initializing cable modems subsequent to a cable modem termination system re-boot that comprises receiving initial upstream channel requests from a plurality of said modems; retrieving first data from each of the requests;

and determining an order in which to assign upstream channels to each of the plurality of modems based on the retrieved first data. FIJOLEK et al. and ZADIKIAN et al., whether taken alone or in any reasonable combination, do not disclose or suggest this combination of features.

For example, FIJOLEK et al. and ZADIKIAN et al. do not disclose or suggest determining an order in which to assign upstream channels to each of a plurality of modems based on data retrieved from initial upstream channel requests. The Examiner appears to admit that FIJOLEK et al. does not disclose this feature and relies on column 6, lines 15-22 of ZADIKIAN et al. as allegedly disclosing this feature (final Office Action, pg. 5). Appellant respectfully disagrees with the Examiner's interpretation of ZADIKIAN et al.

Column 6, lines 15-22 of ZADIKIAN et al. has been reproduced above. This section of ZADIKIAN et al. discloses restoring connections with a highest quality of service first, followed, in descending order, by those with a lower quality of service, until either all connections have been restored or all available bandwidth has been used. This section of ZADIKIAN et al. discloses restoring failed connections based on quality of service, not determining an order in which to assign upstream channels to each of a plurality of modems based on data retrieved from initial upstream channel requests, as recited in claim 25. In fact, this section of ZADIKIAN et al. does not even mention an upstream channel request.

The Examiner provides no explanation as to how one skilled in the art at the time of Appellant's invention could reasonably construe the above section of ZADAKIAN et al. as disclosing determining an order in which to assign upstream channels to each of a

plurality of modems based on data retrieved from initial upstream channel requests.

Accordingly, a *prima facie* case of obviousness has not been established with regard to claim 25.

For at least the foregoing reasons, Appellant submits that the rejection of claim 25 under 35 U.S.C. § 103 based on FIJOLEK et al. and ZADIKIAN et al. is improper.

Accordingly, Appellant requests that the rejection of claim 25 be reversed.

Claims 26-28, 30, and 31 depend from claim 25. Therefore, Appellant requests that the rejection of claims 26-28, 30, and 31 be reversed for at least the reasons given above with respect to claim 25.

#### 9. Claim 29

Claim 29 depends from claim 27. Therefore, Appellant requests that the rejection of claim 29 be reversed for at least the reasons given above with respect to claim 27.

Moreover, claim 29 recites an additional feature not disclosed or suggested by FIJOLEK et al. and ZADIKIAN et al.

For example, claim 29 recites that the first group of the plurality of groups comprise message transferring agents. The Examiner relies on column 24, lines 39-41 of FIJOLEK et al. as allegedly disclosing this feature of claim 29 (final Office Action, pg. 5).

Appellant respectfully disagrees with the Examiner's interpretation of FIJOLEK et al.

As noted above, at column 24, lines 39-41, FIJOLEK et al. discloses that the Medium Access Control (MAC) address is sent to a cable modem or to customer premise equipment in a Termination System Information (TSI) message. This section of FIJOLEK et al. does not disclose a group, let alone a group that comprises message transferring agents. Therefore, this section of FIJOLEK et al. does not disclose or

suggest that a first group of the plurality of groups comprises message transferring agents, as recited in claim 29.

For at least this additional reason, Appellant submits that the rejection of claim 29 under 35 U.S.C. § 103 based on FIJOLEK et al. and ZADIKIAN et al. is improper. Accordingly, Appellant requests that the rejection of claim 29 be reversed.

10. Claim 34

Independent claim 34 recites a system for allocating upstream resources to a plurality of cable modems subsequent to a cable modem termination system (CMTS) re-boot. The system comprises means for grouping the plurality of cable modems into a plurality of groups; and means of identifying an order, subsequent to the CMTS re-boot, that said upstream resources are to be allocated to each of the plurality of cable modems based on the group to which each of the cable modems belongs. FIJOLEK et al. and ZADIKIAN et al., whether taken alone or in any reasonable combination, do not disclose or suggest this combination of features.

For example, FIJOLEK et al. and ZADIKIAN et al. do not disclose or suggest means of identifying an order, subsequent to the CMTS re-boot, that upstream resources are to be allocated to each of the plurality of cable modems based on the group to which each of the cable modems belongs. The Examiner appears to admit that FIJOLEK et al. does not disclose this feature and relies on column 6, lines 15-22 of ZADIKIAN et al. as allegedly disclosing this feature of claim 34 (final Office Action, pg. 4). Appellant respectfully disagrees with the Examiner's interpretation of ZADIKIAN et al.

Column 6, lines 15-22 of ZADIKIAN et al. has been reproduced above. This section of ZADIKIAN et al. discloses restoring connections with a highest quality of

service first, followed, in descending order, by those with a lower quality of service, until either all connections have been restored or all available bandwidth has been used. This section of ZADIKIAN et al. discloses restoring failed connections based on quality of service, not means of identifying an order, subsequent to the CMTS re-boot, that upstream resources are to be allocated to each of the plurality of cable modems based on the group to which each of the cable modems belongs. In fact, this section of ZADIKIAN et al. does not disclose allocating upstream resources at all.

The Examiner provides no explanation as to how one skilled in the art at the time of Appellant's invention could reasonably construe the above section of ZADAKIAN et al. as disclosing means of identifying an order, subsequent to the CMTS re-boot, that upstream resources are to be allocated to each of the plurality of cable modems based on the group to which each of the cable modems belongs. Accordingly, a prima facie case of obviousness has not been established with regard to claim 25.

For at least the foregoing reasons, Appellant submits that the rejection of claim 34 under 35 U.S.C. § 103 based on FIJOLEK et al. and ZADIKIAN et al. is improper. Accordingly, Appellant requests that the rejection of claim 34 be reversed.

VIII. CONCLUSION

In view of the foregoing arguments, Appellant respectfully solicits the Honorable Board to reverse the Examiner's rejections of claims 1, 3-8, 10-31, and 34.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,

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IX. APPENDIX

1. A method of allocating upstream resources to a plurality of cable modems, comprising:
  - grouping the plurality of cable modems into a plurality of groups based on quality of service requirements of each of the cable modems;
  - ordering allocation of said upstream resources to each of the plurality of cable modems based on the group to which each of the cable modems belongs; and
  - allocating said upstream resources to each of the cable modems based on the ordering.
2. (canceled)
3. The method of claim 1, wherein allocating said upstream resources comprises:
  - assigning initialization channels of the upstream resources to each of the plurality of cable modems based on the grouping of the plurality of cable modems.
4. The method of claim 1, wherein allocating said upstream resources comprises:
  - assigning registration channels of the upstream resources to each of the plurality of cable modems based on the grouping of the cable modems.
5. The method of claim 1, wherein a first group of the plurality of groups comprises message transferring agents.

6. The method of claim 1, further comprising:  
designating a first group of the plurality of groups as requiring said allocation of upstream resources before other groups of the plurality of groups.

7. The method of claim 6, further comprising:  
designating a second group of the plurality of groups as being said allocated upstream resources subsequent to the first group.

8. A cable modem termination system (CMTS), comprising:  
a memory configured to store instructions; and  
a processing unit configured to execute the instructions in the memory to:  
group a plurality of cable modems (CMs) into a plurality of groups based on quality of service requirements of each of the cable modems,  
re-boot the CMTS, and  
determine an order for allocating upstream resources to each of the plurality of CMs based on the group to which each of the CMs belongs.

9. (canceled)

10. The system of claim 8, wherein the processing unit is further configured to execute the instructions in the memory to:  
allocate initialization channels of the upstream resources to each of the plurality of CMs based on the grouping of the plurality of CMs.

11. The system of claim 8, wherein the processing unit is further configured to execute the instructions in the memory to:
  - allocate registration channels of the upstream resources to each of the plurality of CMs based on the grouping of the CMs.
12. The system of claim 8, wherein a first group of the plurality of groups comprises message transferring agents.
13. The system of claim 8, wherein the processing unit is further configured to execute the instructions in the memory to:
  - designate the first group of the plurality of groups as requiring the allocation of upstream resources before other groups of the plurality of groups.
14. The system of claim 13, wherein the processing unit is further configured to execute the instructions in the memory to:
  - designate a second group of the plurality of groups as being said allocated upstream resources subsequent to the first group.
15. A method of allocating upstream resources in a cable modem system, comprising:
  - receiving upstream resource requests from a plurality of cable modems, each of the resource requests comprising an address associated with a cable modem of the plurality of cable modems;

determining an order that the upstream resources are to be assigned to each of the plurality of cable modems based on the address of each of the resource requests; and allocating the upstream resources based on the determined order.

16. The method of claim 15, wherein the address comprises a medium access control (MAC) address.

17. The method of claim 15, further comprising:  
grouping the plurality of cable modems into a plurality of groups.

18. The method of claim 17, wherein ordering the allocation of upstream resources comprises allocating the upstream resources to each of the plurality of cable modems based on a group of the plurality of groups to which each of said cable modems belongs.

19. The method of claim 17, wherein the grouping of the plurality of cable modems comprises grouping the plurality of cable modems into the plurality of groups based on quality of service requirements of each of the cable modems.

20. A cable modem termination system, comprising:  
a memory configured to store instructions;  
a communication interface configured to receive upstream resource requests from a plurality of cable modems, each of the resource requests comprising an address associated with a cable modem of the plurality of cable modems; and

a processing unit configured to execute the instructions in the memory to:

determine an order for allocating upstream resources to each of the plurality of cable modems based on the address of each of the resource requests.

21. The system of claim 20, wherein the address comprises a medium access control (MAC) address.

22. The system of claim 20, wherein the processing unit is further configured to execute the instructions in the memory to:

group the plurality of cable modems into a plurality of groups.

23. The system of claim 20, wherein the processing unit is further configured to execute the instructions in the memory to:

allocate the upstream resources to each of the plurality of cable modems based on a group of the plurality of groups to which each cable modem belongs.

24. The system of claim 22, wherein the processing unit is further configured to execute the instructions in the memory to:

group the plurality of cable modems into the plurality of groups based on quality of service requirements of each of the cable modems.

25. A method of initializing cable modems subsequent to a cable modem termination

system re-boot, comprising:

receiving initial upstream channel requests from a plurality of said modems;  
retrieving first data from each of the requests; and  
determining an order in which to assign upstream channels to each of the plurality of modems based on the retrieved first data.

26. The method of claim 25, wherein the first data comprises a medium access control (MAC) address.

27. The method of claim 25, further comprising:  
grouping the plurality of modems into a plurality of groups.

28. The method of claim 27, wherein grouping the plurality of cable modems comprises grouping the plurality of modems into the plurality of groups based on quality of service requirements of each of the modems.

29. The method of claim 27, wherein a first group of the plurality of groups comprise message transferring agents.

30. The method of claim 27, further comprising:  
designating a first group of the plurality of groups as requiring allocation of upstream resources before other said groups of the plurality of groups.

31. The method of claim 30, further comprising:  
designating a second group of the plurality of groups as being allocated said  
upstream resources subsequent to the first group.
32. (canceled)
33. (canceled)
34. A system for allocating upstream resources to a plurality of cable modems  
subsequent to a cable modem termination system (CMTS) re-boot, comprising:  
means for grouping the plurality of cable modems into a plurality of groups; and  
means of identifying an order, subsequent to the CMTS re-boot, that said  
upstream resources are to be allocated to each of the plurality of cable modems based on  
the group to which each of the cable modems belongs.

X. EVIDENCE APPENDIX

None

XI. RELATED PROCEEDINGS APPENDIX

None